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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,489

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Hajime Kimura

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EXAMINER

WILSON, GREGORY A

ART UNIT

PAPER NUMBER

3749

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,489	<b>Applicant(s)</b> KIMURA ET AL.	
	<b>Examiner</b> Gregory A. Wilson	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over (**JP 2001-324102**). **JP 2001-324102** discloses a boiler apparatus for leading fluid from a plurality of upper walls (13, 9, 15) to a ceiling wall (27) through a ceiling wall inlet header (unnumbered) and for leading fluid from a nose wall (11) to auxiliary side walls (31) through outlet connecting ducts (unnumbered), wherein a ceiling wall inlet mixing header (SEE Figure) having a plurality of holes on one and the same line near one end for the ceiling wall inlet mixing header for receiving connections from the plurality of upper walls wherein the fluid coming from the nose wall is not introduced into the ceiling wall inlet mixing header (SEE Figure), is installed between the plurality of upper walls and the ceiling wall inlet header, the upper walls are connected to vicinities of one end portion of the ceiling wall inlet mixing header through mixing header inlet connecting ducts while the ceiling wall inlet header is connected to vicinities of the other end portion of the ceiling wall inlet mixing header through mixing header outlet connecting ducts; the ceiling wall inlet mixing header is installed substantially in a central portion in a furnace width direction, and the mixing header outlet connecting ducts are disposed

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substantially symmetrically with respect to the ceiling wall inlet mixing header (SEE Figure). The Japanese references does not particular teach the shape of the ceiling wall inlet mixing header being bent in an L-shape. Having a bent L-shape configuration represents a size variation (or shape variation) wherein such a modification to the ceiling wall inlet mixing header of JP 2001-324102 would generally be recognized as being within the level of ordinary skill in the art, additionally, it would have been an obvious matter of design choice, since the applicant has not disclosed that having a bent ceiling wall inlet mixing header solves any stated problem in a new or unexpected way or is for any particular purpose which would be considered non-obvious to one of ordinary skill in the art and it appears that the boiler apparatus of JP 2001-324102 would perform equally well with a ceiling wall inlet mixing header of various shapes.

### ***Response to Arguments***

Applicant's arguments filed 3/3/2010 have been fully considered but they are not persuasive. To further explain the interpretation of the claims, it is noted that a comparison was made between the lone Figure of prior art reference JP2001-324102 and Figure 1 of the applicants disclosure, wherein the structures are practically identical including the structural element 5 of the applicants disclosure (upper nose wall) which corresponds to element 11 of JP2001-324102, likewise interpreted by the Examiner as being the upper nose wall. JP2001-324102 is absent a Figure corresponding to Figure 5 of the applicants disclosure wherein the upper nose wall 5 projects into a boiler furnace, however, the applicant has not provided any evidence that the corresponding

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structure (11) of the prior art reference would not be also considered a nose wall and thus extend into the combustion chamber of the boiler furnace. In fact, it is common knowledge in the art that a nose wall extend into the combustion chamber thereby generating a high temperature fluid, evidence of which is provided in the newly cited references included in the enclosed PTO-892, namely Okamoto et al (7,073,451), Wittchow (6,651,596), and Barberton et al (3,665,893) though many more exist. It can clearly be seen that the pipes which project out of nose wall (11) do not project into the ceiling wall inlet header (which is not represented by an element number but corresponds to the element number 8 of the applicants Figure 1), but directly into auxiliary side walls (31) thus anticipating the structure of the applicants claimed invention. In view of this interpretation of the drawings of JP2001-324102, it can be concluded that the fluid coming from the nose wall (11) is very high in temperature as compared with the fluid coming from the side walls (13 & 15), the front wall (9) and the screen wall (29) and that the nose wall (11) extends into the combustion chamber as is common knowledge in the art.

The applicant submits that prior art reference JP2001-324102 does not disclose or suggest the construction of the applicants invention, while the examiner can agree that this may be true in part, the examiner takes the position that JP2001-324102 teaches structure which is obvious over the applicants invention. The applicant makes the argument that because of the bent configuration of the mixing header, that the length L2 occupied by the ceiling wall inlet mixing header 8 can be made substantially

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shorter than length L1, which would be occupied by the header 8 if it were extended like a straight line, while still maintaining the length of the fluid mixer region with the benefit of such a construction being that the apparatus can be made compact. In addition, the Applicant argues that an additional benefit for having a bent portion (23) is that in combination with being provided halfway in the ceiling wall inlet mixing header (8), the flow of fluid can be changed so that fluid mixing can be “performed satisfactorily”.

Performing satisfactorily is relative and it is unclear as to what is being argued. Does performing satisfactorily mean performing up to the same level if the mixing header was a straight piece? or does performing satisfactorily mean that a certain level of mixing is achieved? The Applicant has not provided any support in the specification to define what performing satisfactorily would entail. In addition, it is unclear how changing the direction of flow would improve fluid mixing and the Applicants disclosure is absent of any discussion of a bent pipe having better mixing over a straight pipe, in fact in paragraph [0033], the specification supports connecting ducts (9) being installed in positions where enough distance from the connections points with the mixing header inlet connecting ducts (10) can be secured to attain perfect mixing, wherein it is unclear how the shape of the pipe affects this. For the design purposes of having a more compact structure, a person having ordinary skill in the art attempting to solve the problem of a limiting the space requirement of a ceiling wall inlet mixing header and corresponding structure would have been led to try a number of structural configurations of bent mixing tubes/headers, choosing from a finite number of possibilities, predictable solutions, with a reasonable expectation of success. Changing a straight tube to a bent

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tube to achieve the same function but in a more compact structure constitutes a predictable variation which would be obvious to a person having ordinary skill in the art.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory A. Wilson whose telephone number is (571)272-4882. The examiner can normally be reached on 7 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory A. Wilson/  
Primary Examiner, Art Unit 3749  
May 29, 2010